EXPOSURE OF LAKE MÖHNE ANGLERS TO PERFLUORINATED COMPOUNDS - ONE YEAR FOLLOW UP

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Background and Aims: In 2008, a cross-sectional study was performed at Lake Möhne, Germany, to assess the PFC body burden of 105 anglers (Hölzer et al. 2008). The contamination of Lake Möhne fish occurred mainly by application of polluted soil conditioner on agricultural lands, which drained into tributaries of the river Möhne. North-Rhine-Westfalian Ministry for Environment recommended limiting fish consumption from Lake Möhne to three times a month at most. The fish advisory is based on a provisional tolerable daily intake of 100 ng PFOS/kg_{bw}. Here we report for the first time on the results of the follow up study, which was performed more than one year after the first study.
Methods: Lifestyle factors, fish and drinking water consumption habits were assessed by questionnaire and interview. Perfluorooctanoate (PFOA), perfluorooctanesulfonate (PFOS), perfluorohexanoate (PFHxA), perfluorohexanesulfonate (PFHxS), perfluoropentanoate (PFPA) and perfluorobutanesulfonate (PFBS) in blood plasma and PFOA/PFOS in fish and drinking water samples were measured by solid phase extraction, HPLC and MS/MS detection.
Results: PFOS concentrations in perches ranged between 22 and 160, in pikes between 15 and 73 ng/$g_{fresh\ weight}$. 84 anglers (80 %) participated in the follow up study. Median interval between the two blood samples was 420 days. 12 percent of all participants stopped angling and eating fish from Lake Möhne after the first study 2008. Among those anglers, who stopped angling and eating fish from Lake Möhne, PFOS-concentrations in blood plasma decreased by 4 and 33 % (geometric mean: 17 %).
Conclusions: The observed decline of PFOS-concentrations in anglers seems to reflect both the discontinued intake by the anglers and the decrease of PFOS in the general population.
References: Hölzer J, Müller J, Schaub S, Rauchfuss K, Kraft M, Göen T and Wilhelm M. Biomonitoring of Perfluorinated Compounds in Anglers. Epidemiology 2011;22(1): S234-S234 .